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Panel on Commerce and Industry

Meeting on 17 June 2014

**Updated background brief on Research and Development Centres
set up under the Innovation and Technology Fund**

Purpose

1. This paper provides background information on the Research and Development (R&D) Centres set up under the Innovation and Technology Fund (ITF)¹. It also summarizes the views and concerns expressed by Members on the subject during previous discussions.

Background

2. Following consultation with the Panel on Commerce and Industry (the Panel) in 17 May 2005, the Administration submitted a funding proposal to the Finance Committee (FC) to take forward the new strategic framework aimed at adopting a more focused approach to promote innovation and technology development. On 24 June 2005, FC approved a total commitment of \$273.9 million under ITF for the establishment of four R&D Centres and their first five-year operation up to 31 March 2011. In addition to the four R&D Centres, namely Automotive Parts and Accessory Systems R&D Centre (APAS), R&D Centre for Logistics and Supply Chain

¹ ITF was set up as a statutory fund under the Public Finance Ordinance (Cap. 2) by resolution of the Legislative Council on 30 June 1999. On 9 July 1999, the Finance Committee approved the proposed injection of HK\$5 billion into ITF and ITF came into operation on 1 November 1999. ITF is currently administered by the Innovation and Technology Commission (ITC) and comprises four programmes, namely the Innovation and Technology Support Programme, the University-Industry Collaboration Programme, the General Support Programme and the Small Entrepreneur Research Assistance Programme.

Management Enabling Technologies (LSCM), Hong Kong Research Institute of Textiles and Apparel (HKRITA) and Nano and Advanced Materials Institute (NAMI), the R&D Centre for Information and Communications Technologies (ICT)² was set up under the Hong Kong Applied Science and Technology Research Institute (ASTRI) in April 2006. The five R&D Centres served as focal points to drive and coordinate applied R&D and to promote commercialization of R&D results and technology transfer.

3. On 19 June 2009, FC further approved an increase in the funding commitment by \$369 million to extend the operation of the APAS, LSCM, HKRITA and NAMI for three years up to 31 March 2014.

4. Following FC's approval on 11 May 2012, the funding commitment was further increased by \$275.3 million to support the continued operation of NAMI and APAS for another three years up to 31 March 2017, and the operation of LSCM for one more year up to 31 March 2015. While the operation of HKRITA was extended up to 31 March 2015, no additional funding was required as its estimated total expenditure of \$140.2 million by 31 March 2015 could be adequately covered by its approved commitment of \$153.6 million.

5. The FC further approved on 24 January 2014 an additional grant of \$100.8 million from the ITF to support the continued operation of the HKRITA (\$44.1 million) and the LSCM (\$56.7 million) for another two years up to 2016-2017.

6. Taken together, the total funding commitment approved by FC for the R&D Centres to meet their operating expenditure for a total of 11 years (from April 2006 up to 31 March 2017) is \$1,019 million.

Views and concerns expressed by Members

7. Panel members have followed closely the operation of the R&D Centres over the years and were briefed on the outcome of the mid-term review, the review on the modus operandi and operating costs of the R&D centers and the full review on the R&D Centres' operation and overall performance for the first five-year period conducted by the Administration in 2009, 2010 and 2011 respectively. The Panel generally supported the role of R&D Centres to spearhead the advancement of R&D of Hong Kong, and hoped that the commercialization of local R&D results could bring about

² Unlike the other four R&D Centres which have been established as independent legal entities, ICT has been established within the existing operational infrastructure of ASTRI, which is a limited company wholly owned by the Government. The operating cost of ICT is funded separately by the Government's annual subvention to ASTRI.

wider social and economic benefits to the community. The major concerns expressed by members are summarized below.

Cost-effectiveness of the R&D Centres

8. The cost-effectiveness of the R&D Centres has been a major concern of the Panel given the substantial funding invested in the operation of the R&D Centres. Members noted with concern that the estimated operating costs of \$642.9 million for the four ITF-funded R&D Centres from 2006-2007 to 2013-2014 represented an average of about 26% of their estimated R&D expenditures of \$2,431.7 million for the same period. Members were of the view that the operating costs of the R&D Centres should not be too high in order that adequate resources would be available for R&D projects.

9. To address members' concern about the high operating costs, a review was conducted by the Administration in 2010 to look into the modus operandi of the R&D Centres to explore room for achieving greater savings and higher cost-effectiveness. Options including the provision of central supporting services and co-location of the R&D Centres were recommended to lower operating costs and facilitate synergy. Following a full review in early 2012 on the way forward for R&D Centres as to whether the R&D Centres should merge, disband or maintain the status quo, APAS was merged with the Hong Kong Productivity Council with a view to enhancing cooperation between the two organizations and achieving higher cost-effectiveness.

Realization of R&D results

10. Panel members were keen to ensure that the R&D Centres could help promote the realization of R&D results and urged the Administration to speed up the commercialization of R&D deliverables, especially in the Mainland market. Members were of the view that the market strategy of R&D products should be competitive in terms of creativity rather than price, and that the R&D Centres should play a critical role in providing novel ideas to the enterprises. The Administration was requested to strengthen R&D Centres' co-operation with local and Mainland universities/institutions to fully leverage on their technical hardware and software, and help the R&D Centres forge closer ties with manufacturers in the Pearl River Delta (PRD) region. The Administration undertook to step up efforts in encouraging R&D Centres to be more proactive in commercialization of R&D results and technology transfer. The performance of the R&D Centres in this respect would be assessed on the basis of industry income from licensing fees, royalty payments and contract research, number of companies granted with

technology licence, etc.

11. To help promote commercialization of R&D results and technology transfer, some Panel members called on the Administration to take the lead to adopt more local R&D results in the public sector (including government departments, public bodies and trade associations) so that researchers and product developers could gain actual experience to fine-tune their products, and build up "reference" for subsequent marketing. The Administration should also encourage local manufacturing of R&D deliverables so as to create more job opportunities. While welcoming the introduction of the Public Sector Trial Scheme (PSTS) introduced in March 2011 to provide additional funding support to completed R&D projects funded by the ITF for the production of tools/prototypes/samples, members urged the Administration to consider allowing trial schemes to be conducted in private organizations and outside Hong Kong so as to enlarge the clientele and establish credibility internationally. There were views that the Administration should explore cooperation between Hong Kong and the Mainland in innovation and technology under the Mainland and Hong Kong Closer Economic Partnership Arrangement. The Administration advised that in the light of the good response to the public-sector trial initiative, the PSTS was extended in July 2012 to cover not only projects undertaken by R&D Centres but also all R&D projects funded under the ITF. Trial schemes were also allowed to be applied in the public sector outside Hong Kong and in the Mainland and trial of R&D outcomes by private organizations in Hong Kong could be conducted in collaboration with the relevant chambers of commerce or trade associations. As one of the improvement measures proposed in the comprehensive review of ITF to further promote the adoption of R&D outcome in the public sector, the funding ceiling for PSTS projects has been raised from 30% to 50% of the actual cost of the original ITF-funded projects.

Industry participation and collaboration

12. Panel members were of the view that R&D Centres should step up its effort to further reach out and forge closer ties with industry-support bodies, trade associations and enterprises to develop more demand-led and industry-driven R&D projects relevant to the needs of industry users, in particular small and medium size enterprises. Members considered that the R&D Centres should strengthen their promotion and publicity efforts to enhance industry customers' awareness of the R&D projects undertaken and the research output so as to secure continued support from the industries concerned for applied R&D in Hong Kong. Some members suggested that more trade shows should be staged to strengthen the connection between the Centres and the industry.

13. Some members noted with concern that the industry was not very keen on collaborating with the R&D Centres in conducting R&D projects as the existing funding arrangements under ITF were too restrictive while the project vetting requirements and procedures were too complex and cumbersome to facilitate worthy projects to be undertaken quickly. Members considered that the Administration should avoid micro managing the operations of the R&D Centres. The Administration advised that it would take a critical look at the long-term funding arrangements for the R&D projects/activities and the R&D Centres during the comprehensive review of the ITF. The Administration would evaluate the operation of all the R&D Centres around year 2015 and put forward recommendations on their future operation subject to the outcome of the review.

Performance assessment and way forward

14. Some panel members were of the view that innovation and technology was a long-term investment that required time for the realization of R&D deliverables and therefore the Administration should not take short-term monetary income as the sole performance indicator for the R&D Centres. The management of the R&D Centres was requested to include in their annual reports to the Panel information on the social and economic benefits brought about to the community by their R&D results, so as to enhance public's understanding of the effectiveness and value of R&D to the society.

15. There was a suggestion that each of the R&D Centres should conduct an analysis on their strengths, weaknesses, opportunities and challenges, so as to facilitate a better assessment of their performance and to provide a basis for formulating improvement measures as necessary. The Administration was advised to explore the need for additional R&D Centres in other focus areas as fit.

16. Panel members considered that Hong Kong's gross expenditure on R&D as a ratio to the gross domestic product at below 0.8% was relatively low compared to neighbouring economies and by international standard. The Administration was urged to put in more resources to promote R&D development by making reference to international indicators on innovation and technology as well as R&D development. More emphasis should also be placed on stimulating private sector investment in R&D and nurturing local R&D talents and attracting overseas R&D talents to work in Hong Kong so as to strengthen Hong Kong's R&D capability.

17. At the Council meeting on 16 October 2013, Hon Kenneth LEUNG moved a motion on "Optimizing public finances and enhancing the impetus for innovation in Hong Kong's economy". Members called upon the Administration to formulate long-term, comprehensive and concrete policies on technology industries, including, inter alia, supporting the development of local applied scientific research and technology transfer. The motion as amended by Dr Hon Elizabeth QUAT, Hon Andrew LEUNG Kwan-yuen, Hon Ronny TONG Ka-wah and Hon Charles Peter MOK was passed.

Recent development

Audit review of ITF

18. The Director of Audit ("DoA") has conducted a value-for-money audit on the ITF. Findings and recommendations were set out in Chapter 9 and Chapter 10 of DoA's Report No. 61 which was tabled at the Legislative Council on 13 November 2013. In relation to the performance of R&D Centres, the DoA recommended that the Innovation and Technology Commission (ITC) should:

- (a) conduct a cost-effectiveness review of the five R&D centres, taking into account the performance results identified by the Audit Commission identified;
- (b) conduct a review on the target level of industry contribution for the R&D centres, and review the feasibility of achieving the self-financing target for individual centres in the longer term; and
- (c) set realistic performance targets, including quantitative and qualitative ones, on the operation of the R&D centres.

19. The Administration agreed to pay due regard to the audit recommendations in conducting the on-going comprehensive review to the ITF and make improvements in stages. The Administration had critically reviewed the operating expenditure and cost-effectiveness of the R&D Centres and would continue to work with the Board of Directors/management of the R&D Centres and enhance their existing set of performance indicators and targets from time to time.

Comprehensive review of ITF

20. As part of a comprehensive review of the ITF which commenced in mid-June 2013, the ITC has introduced the following measures to facilitate the commercialization and monitoring of performance of the R&D Centres:

- (a) the ITC has promulgated in August 2013 a new guide on intellectual property arrangements for projects funded by the Innovation and Technology Support Programme of the ITF which sets out the latest policy and arrangements pertaining to intellectual property and related matters. It aims to provide a clear, transparent, fair and consistent framework for intellectual property arrangements, and allow greater/reasonable flexibility for the R&D Centres and other local research institutions to determine the best terms of commercialization and benefit-sharing arrangements having regard to their individual circumstances; and
- (b) the ITC has, in consultation with the R&D Centres, developed a more comprehensive/systematic post-project evaluation framework to better measure the performance of the R&D Centres in a more comprehensive manner. A trial run of the new framework has recently been completed and it will be put in place shortly.

Latest position

21. The Administration will brief the Panel on 17 June 2014 on the operation of the R&D Centres for 2013-2014.

Relevant papers

22. A list of relevant papers is set out in the **Appendix**.

Appendix

Research and Development Centres set up under the Innovation and Technology Fund

List of relevant papers

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
17/5/2005	Panel on Commerce and Industry	Administration's paper	CB(1)1496/04-05(03) http://www.legco.gov.hk/yr04-05/english/panels/ci/papers/ci0517cb1-1496-3e.pdf
		Background brief	CB(1)1497/04-05 http://www.legco.gov.hk/yr04-05/english/panels/ci/papers/ci0517cb1-1497e.pdf
		Minutes meeting	of CB(1)1794/04-05 http://www.legco.gov.hk/yr04-05/english/panels/ci/minutes/ci050517.pdf
24/6/2005	Finance Committee	Administration's paper	FCR(2005-06)21 http://www.legco.gov.hk/yr04-05/english/fc/fc/papers/f05-21e.pdf
		Minutes meeting	of FC125/04-05 http://www.legco.gov.hk/yr04-05/english/fc/fc/minutes/fc050624.pdf
21/4/2009	Panel on Commerce and Industry	Administration's paper	CB(1)1286/08-09(07) http://www.legco.gov.hk/yr08-09/english/panels/ci/papers/ci0421cb1-1286-7-e.pdf

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
		Updated background brief Minutes meeting of	CB(1)1286/08-09(08) http://www.legco.gov.hk/yr08-09/english/panels/ci/papers/ci0421cb1-1286-8-e.pdf CB(1)2281/08-09 http://www.legco.gov.hk/yr08-09/english/panels/ci/minutes/ci20090421.pdf
19/5/2009	Panel on Commerce and Industry	Administration's paper Updated background brief Minutes meeting of	CB(1)1551/08-09(05) http://www.legco.gov.hk/yr08-09/english/panels/ci/papers/ci0519cb1-1551-5-e.pdf CB(1)1286/08-09(08) http://www.legco.gov.hk/yr08-09/english/panels/ci/papers/ci0421cb1-1286-8-e.pdf CB(1)2643/08-09 http://www.legco.gov.hk/yr08-09/english/panels/ci/minutes/ci20090519.pdf
19/6/2009	Finance Committee	Administration's paper Minutes meeting of	FCR(2009-10)27 http://www.legco.gov.hk/yr08-09/english/fc/fc/papers/f09-27e.pdf FC19/09-10 http://www.legco.gov.hk/yr08-09/english/fc/fc/minutes/fc20090619a.pdf

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
20/12/2011	Panel on Commerce and Industry	<p>Administration's paper</p> <p>Updated background brief</p> <p>Minutes of meeting</p>	<p>CB(1)624/11-12(05)</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/papers/ci1220cb1-624-5-e.pdf</p> <p>CB(1)624/11-12(06)</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/papers/ci1220cb1-624-6-e.pdf</p> <p>CB(1)1039/11-12</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/minutes/ci2011220.pdf</p>
17/4/2012	Panel on Commerce and Industry	<p>Administration's paper</p> <p>Updated background brief</p> <p>Minutes of meeting</p>	<p>CB(1)1549/11-12(03)</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/papers/ci0417cb1-1549-3-e.pdf</p> <p>CB(1)1549/11-12(04)</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/papers/ci0417cb1-1549-4-e.pdf</p> <p>CB(1)1809/11-12</p> <p>http://www.legco.gov.hk/yr11-12/english/panels/ci/minutes/ci20120417.pdf</p>
11/5/2012	Finance Committee	Administration's paper	<p>FCR(2012-13)21</p> <p>http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f12-21e.pdf</p>

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
		Minutes of meeting	FC183/11-12 http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20120511.pdf
18/6/2013	Panel on Commerce and Industry	Administration's paper Background brief Minutes of meeting	CB(1)1282/12-13(05) http://www.legco.gov.hk/yr12-13/english/panels/ci/papers/ci0618cb1-1282-5-e.pdf CB(1)1282/12-13(06) http://www.legco.gov.hk/yr12-13/english/panels/ci/papers/ci0618cb1-1282-6-e.pdf CB(1)1726/12-13 http://www.legco.gov.hk/yr12-13/english/panels/ci/minutes/ci20130618.pdf
16/10/2013	Council	Motion on "Optimizing public finances and enhancing the impetus for innovation in Hong Kong's economy" moved by Hon Kenneth LEUNG	Wording of the motion passed http://www.legco.gov.hk/yr13-14/english/counmtg/motion/cm1016-m2-wordings-e.pdf
19/11/2013	Panel on Commerce and Industry	Administration's paper	CB(1)290/13-14(03) http://www.legco.gov.hk/yr13-14/english/panels/ci/papers/ci1119cb1-290-3-e.pdf

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
		Updated background brief Minutes meeting of	CB(1)290/13-14(04) http://www.legco.gov.hk/yr13-14/english/panels/ci/papers/ci1119cb1-290-4-e.pdf CB(1)747/13-14 http://www.legco.gov.hk/yr13-14/english/panels/ci/minutes/ci20131119.pdf
24/1/2014	Finance Committee	Administration's paper Minutes meeting of	FCR(2013-14)55 http://www.legco.gov.hk/yr13-14/english/fc/fc/papers/f13-55e.pdf FC73/13-14 http://www.legco.gov.hk/yr13-14/english/fc/fc/minutes/fc20140124.pdf
18/2/2014	Panel on Commerce and Industry	Administration's paper Background brief Minutes meeting of	CB(1)885/13-14(03) http://www.legco.gov.hk/yr13-14/english/panels/ci/papers/ci0218cb1-885-3-e.pdf CB(1)885/13-14(04) http://www.legco.gov.hk/yr13-14/english/panels/ci/papers/ci0218cb1-885-4-e.pdf CB(1)1234/13-14 http://www.legco.gov.hk/yr13-14/english/panels/ci/minutes/ci20140218.pdf